UNITED STATES DEPARTMENT of the INTERIOR

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INTERIOR DEPARTMENT SUGGESTS STUDY OF RESEARCH SUBMARINE

Jules Verne surely didn't know what he was starting when he wrote about hunting undersea creatures from a submarine. The Department of the Interior now proposes a study that could lead to the construction of a nuclear-powered research submarine, or mesoscaphe, to explore the deep frontier of the ocean.

Such a mesoscaphe, which literally means "middle boat," could carry out studies on marine fishing and mineral resources, disposal of atomic wastes, national defense, and weather predictions, according to Secretary of the Interior Stewart L. Udall. Biological, physical, and chemical oceanography are prime investigational areas for a research mesoscaphe, he said.

According to Marling J. Ankeny, Director of the Bureau of Mines, the submarine's mineral missions would include investigations of marine mineral resources such as coal, petroleum, and metals. It would probe the bottom of the sea by obtaining cores drilled from the ocean floor. It would be able to hover over a spot and remain stable while doing the deep drilling, and could greatly reduce mineral exploration costs by eliminating the need for permanent drilling rigs at depths now beyond the reach of commercial equipment.

Director Donald L. McKernan of the Bureau of Commercial Fisheries noted that a mesoscaphe could obtain records of temperature, salinity, dissolved oxygen nutrients, light, and the vagaries of ocean currents by operating to depths of 1,000 feet. Techniques presently available for underwater observations are largely limited to SCUBA diving, underwater photography and television, underwater viewing ports in surface craft and bathyscaphes which are usually capable of only vertical movement.

On the other hand, a mesoscaphe with its lateral movement, could scoop up various types of plankton, follow sonar-tagged fish with instruments and, by using lights, study many of the strange undersea creatures now known only from museum specimens. Viewing ports would allow direct observations of bottom fish and shrimp on the Continental Shelf and on the fishing "banks."

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The undersea craft could carry out several missions dealing with the reactions of fish to fishing gear. The effects of fishing vessel noise on the fish could be determined and the reactions of these fish to fishing nets and other gear could be studied.

The all-weather capability of a submerged craft would permit its use at all latitudes during stormy seasons.

The mesoscaphe, as visualized by Interior scientists, would require a submerged speed of 20 knots in order to track and study large fish, such as sharks and tuna. The vessel would have to be capable of staying submerged as long as six weeks to allow uninterrupted studies of biological and oceanographic changes. The length of the research submarine would have to be less than 200 feet for maneuverability. Nuclear power may be necessary to meet these requirements.

This mesoscaphe is part of the National Oceanographic program being planned and coordinated by the Inter-agency Committee on Oceanography of the Federal Council for Science and Technology.

The Department of the Interior has asked Congress for funds to carry out a feasibility study on the mesoscaphe. Hull and power plant design, construction features, type of undersea collecting gear, and crew training problems would be included in such a study.

"We need better eyes in the sea, eyes comparable in power to those with which scientists are probing outer space," Secretary Udall said. "We need to apply our technological abilities to more intensive probing of inner space, the world ocean."

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